

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ichio YUDASAKA, Tatsuya SHIMODA, Sadao KANBE and Wakao MIYAZAWA

Application No.: New Rule 1.53(b) Divisional of U.S.S.N. 09/325,567

Filed: July 10, 2001

Docket No.: 040090.02

For: THIN FILM DEVICE PROVIDED WITH COATING FILM, LIQUID CRYSTAL
PANEL AND ELECTRONIC DEVICE, AND METHOD FOR MAKING THE THIN
FILM DEVICE

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please cancel claims 1-59 without prejudice to or disclaimer of the subject matter
contained therein.

Please add new claims 60-110 as follows:

--60. A process for forming a pattern on a substrate by deposition of an organic
material comprising the steps of:

depositing a semiconducting organic material in a solvent onto a substrate by
ink-jet printing; and

evaporating the solvent, whereby said organic material remains on the
substrate.--

- 61. The process of claim 60, further comprising drying the deposited material to remove said solvent.--
- 62. The process of claim 60 wherein said organic material is a luminescent polymer.--
- 63. The process of claim 60 wherein said material includes polyvinylcarbazol film.--
- 64. The process of claim 60 wherein said solvent is chloroform.--
- 65. The process of claim 60 wherein said material includes light emitting dyes.--
- 66. The process of claim 65 wherein said light emitting dyes include coumarin and nile red.--
- 67. The process of claim 66 wherein said coumarin is coumarin 6.--
- 68. The process of claim 66 wherein said coumarin is coumarin 47.--
- 69. The process of claim 66 wherein said coumarin is coumarin 6 and coumarin 47.--
- 70. The process of claim 60 wherein said organic material is a mixture of polymers and other organic molecules.--
- 71. A process for making organic light emitting diodes comprising the steps of:
depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and
evaporating the solvent, said organic material remaining on the substrate.--
- 72. The process of claim 71 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--
- 73. The process of claim 72 further including the step of metallizing said ink-jet printed substrates.--

--74. The process of claim 73 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--75. The process of claim 74 wherein said top metal contacts are deposited through a shadow mask.--

--76. The process of claim 71 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--77. The process of claim 74 wherein said top metal contacts are deposited in a pattern.--

--78. The process of claim 76 wherein said bottom metal contacts are deposited in a pattern.--

--79. The process of claim 71 further wherein said organic material includes light emitting dyes.--

--80. The process of claim 79 further including the step of depositing top contacts on said organic material by ink jet printing.--

--81. The process of claim 80 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

--82. A process of forming thin film field effect transistors comprising the steps of:
forming a gate electrode on a substrate;
forming a gate insulator over said gate electrode;
forming a polymer semiconducting layer on said insulator by ink-jet printing;
and
forming source and drain contacts on said semiconducting layer.--

--83. The process of claim 82 wherein said gate insulator is formed by ink-jet printing, and the semiconducting layer by other techniques.--

- 84. The process of claim 82 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--
- 85. The process of claim 83 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--
- 86. The process of claim 82 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--
- 87. The process of claim 83 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--
- 88. The process of claim 84 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--
- 89. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:
- depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and
- evaporating the solvent, whereby said organic material remains on the substrate.--
- 90. The process of claim 89, further comprising drying the deposited material to remove said solvent.--
- 91. The process of claim 89 wherein said organic material is semiconducting.--
- 92. The process of claim 89 wherein said organic material is a luminescent polymer.--
- 93. The process of claim 89 wherein said solvent is chloroform.--
- 94. The process of claim 89 wherein said material includes light emitting dyes.--
- 95. The process of claim 94 wherein said light emitting dyes include coumarin and nile red.--

--96. The process of claim 95 wherein said coumarin is coumarin 6.--

--97. The process of claim 95 wherein said coumarin is coumarin 47.--

--98. The process of claim 95 wherein said coumarin is coumarin 6 and coumarin 47.--

--99. The process of claim 89 wherein said organic material is a mixture of polymers and other organic molecules.--

--100. A process for making organic light emitting diodes comprising the steps of:
depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, said organic material remaining on the substrate.--

--101. The process of claim 100 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--

--102. The process of claim 101 further including the step of metallizing said ink-jet printed substrates.--

--103. The process of claim 102 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--104. The process of claim 103 wherein said top metal contacts are deposited through a shadow mask.--

--105. The process of claim 100 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--106. The process of claim 103 wherein said top metal contacts are deposited in a pattern.--

--107. The process of claim 105 wherein said bottom metal contacts are deposited in a pattern.--

--108. The process of claim 100 further wherein said organic material includes light emitting dyes.--

--109. The process of claim 108 further including the step of depositing top contacts on said organic material by ink jet printing.--

--110. The process of claim 109 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

REMARKS

Claims 60-110 are pending. By this Amendment, claims 1-59 are canceled, and claims 60-110 are added.

Prompt and favorable examination on the merits is respectfully requested.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Eric D. Morehouse
Registration No. 38,565

JAO:EDM/gam

Date: July 10, 2001

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461
--